

### ABSTRACT

A novel adaptor protein and its gene are provided. The novel adaptor protein has a property of binding to mammalian Toll-like receptor 3, which controls type I interferon production that is effective for prevention/treatment of viral infectious disease such as hepatitis B, hepatitis C, and the like, treatment of tumors, and the other purposes. Novel adaptor protein TICAM-1, which has an amino acid sequence set forth in SEQ ID NO: 2 or NO: 4, has the property of specifically binding to the mammalian Toll-like receptor 3 and a property of inducing type I interferon production. A mutant of the adaptor protein TICAM-1 has similar properties, provided that it has TIR domain (an amino acid sequence ranging from 394-position to 532-position in the amino acid sequence set forth in SEQ ID NO: 2 or an amino acid sequence ranging 396-position to 534-position in the amino acid sequence set forth in SEQ ID NO: 4. The gene is a gene encoding the adaptor protein TICAM-1.